

### **REMARKS/ARGUMENTS**

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

#### **Status of the Claims**

Claims 11-13, 15 and 17-23 are pending. Claims 1-10 were previously withdrawn from further consideration, as being drawn to a provisionally non-elected invention. Claim 14 has been cancelled without prejudice or disclaimer to the subject matter recited therein. Claim 16 was cancelled by prior amendment without prejudice or disclaimer to the subject matter recited therein. Claim 11 has been herein amended. No new matter is added

#### **Rejections Under 35 U.S.C. §§ 102, 103**

Claims 11, 12, 14, 15 and 17-23 are rejected under 35 U.S.C. § 102(b) as being anticipate by U.S. Publication No. 2003/0020085 to Bour et al. ("Bour"). Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bour in view of U.S. Publication No. 2003/0209704 to Yamada. Claim 14 has been cancelled, thus, rendering the rejection of claim 14 moot.

Bour describes that an indium mole fraction of a quantum well layer(40) is graded linearly, and that other functional forms for indium mole fraction in one or more of the quantum well layers in active region 24 may be used. Bour describes that alternate grading of the indium mole fraction may include exponential, parabolic, or step-wise manner. Bour also describes that the indium mole fraction decreases or increases monotonically across a quantum well, the mole fraction of indium may instead have a global maximum and/or one or more local maxima at one or more intermediate positions in the quantum well layer (40). Bour, ¶ 0041; Figs. 4, 6. Bour fails to explicitly disclose a

method for forming the alternative grading of the indium mole fraction. Bour describes a light emitting device that overcomes the problems of an internal piezoelectric field using the *graded* InGa<sub>N</sub> quantum well. Bour, ¶ 0008. Bour discloses that the graded Indium composition quantum well layer may be formed by varying the flow rates of reagent gases during the layer deposition. Bour, ¶ 0047.

Independent claim 11 is directed to a light emitting device and has been amended to now recite an In-rich InGa<sub>N</sub> quantum well layer where the In-rich region is “formed of In<sub>x</sub>Ga<sub>1-x</sub>N, where x in the In-rich region of the quantum well layer is within a range of 0.5 to 0.8.” In contrast, Bour merely describes elements related to the first or second compositional grading region of Indium — e.g., that the indium mole fraction decreases or increases monotonically across a quantum well, the mole fraction of indium may instead have a global maximum and/or one or more local maxima at one or more intermediate positions in the quantum well layer (40). Bour, ¶ 0041; Figs. 4, 6

Further, although Bour discloses that the graded Indium composition quantum well layer may be formed by varying the flow rates of reagent gases during the layer deposition (Bour, ¶ 0047), it is readily understood by a person of ordinary skill in the art that it is impossible to form an In-rich In(x)Ga(1-x)N region(0.5≤x≤0.8) by varying the flow rates of reagent gases during the layer deposition.

Accordingly, Bour does not disclose, or suggest, each and every feature of independent claim 11. Thus, Bour does not disclose, or suggest, each and every feature of dependent claims 12-13, 15 and 17-23. Therefore, Bour does not anticipate claims 11-13, 15 and 17-23.

With regard to Yamada, that reference does not disclose, or suggest, the above-quoted features of amended independent claim 11 demonstrated above to be missing from Bour. Dependent claim 13 depends from claim 11. Accordingly a combination of Bour and Yamada, to the extent proper, could not render claim 13 obvious.

Reconsideration and withdrawal of the rejection of claims 11-12, 15 and 17-23 under 35 U.S.C. § 102(b) based on Bour, and the rejection of claim 13 under 35 U.S.C. § 103(a) based on a combination of Bour and Yamada is respectfully requested.

### **CONCLUSION**

Each and every point raised in the Office Action mailed December 16, 2009, has been addressed on the basis of the above remarks. In view of the foregoing it is believed that pending claims 11-13, 15 and 17-23 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below. In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Commissioner is hereby authorized to charge any unpaid fees deemed required in connection with this submission, or to credit any overpayment, to Deposit Account No. 04-0100.

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Respectfully Submitted,

By 

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